

WO 2005/037268 A1

## (12)特許協力条約に基づいて公開された国際出願

(19)世界知的所有権機関  
国際事務局(43)国際公開日  
2005年4月28日 (28.04.2005)

PCT

(10)国際公開番号  
WO 2005/037268 A1(51)国際特許分類<sup>7</sup>: A61K 31/203, 9/51, 9/06, 9/70, 7/00, 7/48, A61P 17/00, 3/02

(21)国際出願番号: PCT/JP2003/013181

(22)国際出願日: 2003年10月15日 (15.10.2003)

(25)国際出願の言語: 日本語

(26)国際公開の言語: 日本語

(71)出願人(米国を除く全ての指定国について): 株式会社 LTTバイオファーマ (LTT BIO-PHARMA CO., LTD.) [JP/JP]; 〒105-6201 東京都港区愛宕2丁目5番1号 Tokyo (JP).

(72)発明者: および

(75)発明者/出願人(米国についてのみ): 山口葉子 (YAMAGUCHI, Yoko) [JP/JP]; 〒258-0022 神奈川県足柄

上郡開成町牛島27-17 Kanagawa (JP). 五十嵐理恵 (IGARASHI, Rie) [JP/JP]; 〒214-0036 神奈川県川崎市多摩区南生田5丁目8-2 Kanagawa (JP). 水島裕 (MIZUSHIMA, Yutaka) [JP/JP]; 〒106-0032 東京都港区大本木6丁目12-3-2402 Tokyo (JP). 武永美津子 (TAKENAGA, Mitsuko) [JP/JP]; 〒216-0015 神奈川県川崎市宮前区菅生2丁目30-1 Kanagawa (JP). 中村なつみ (NAKAMURA, Natsumi) [JP/JP]; 〒216-0005 神奈川県川崎市宮前区土橋7丁目1-5-111 Kanagawa (JP).

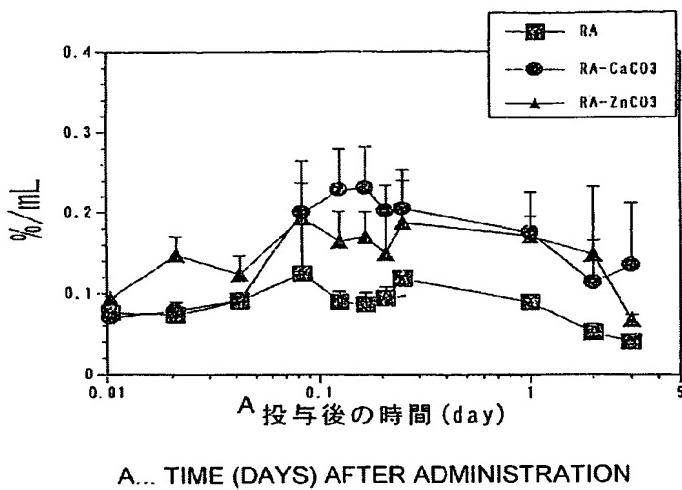
(74)代理人: 草間攻 (KUSAMA, Osamu); 〒102-0072 東京都千代田区飯田橋4丁目5番12号岩田ビル7階草間特許事務所 Tokyo (JP).

(81)指定国(国内): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,

/続葉有/

(54)Title: COMPOSITION CONTAINING RETINOIC ACID NANOPARTICLES COATED WITH POLYVALENT METAL INORGANIC SALT

(54)発明の名称: 多価金属無機塩被覆レチノイン酸ナノ粒子含有組成物



A... TIME (DAYS) AFTER ADMINISTRATION

(57) **Abstract:** It is intended to provide a composition containing, as the active ingredient, retinoic acid nanoparticles having relieved irritation, which can be subcutaneously and intravenously administered, is usable as a sustained release preparation, and has such a high skin-permeability as allowing the use thereof as an external preparation such as a drug or a quasi drug as well as a cosmetic to be applied to the skin, etc. When dissolved in water, the retinoic acid-nanoparticles coated with a polyvalent metal-inorganic salt, i.e., the active ingredient, are maintained in the form of a transparent solution and, therefore, can be administered as a subcutaneous or intravenous injection. Since retinoic acid is coated with a polyvalent metal inorganic salt film, these nanoparticles are characterized by showing relieved irritation and thus causing neither inflammation nor canceration at administration site. As the polyvalent metal inorganic salt, use is made of calcium carbonate, zinc carbonate or calcium phosphate.

/続葉有/